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1860 1865 1870

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Page 9

2860

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<213> Hepatitis C virus

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Asn Gly Ser Trp His Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp Ser 430 420 425 Leu His Thr Gly Phe Ile Ala Ser Leu Phe Tyr Thr His Ser Phe Asn 440 435 Ser Ser Gly Cys Pro Glu Arg Met Ser Ala Cys Arg Ser Ile Glu Ala 450 455 460 _____ Phe Arg Val Gly Trp Gly Ala Leu Gln Tyr Glu Asp Asn Val Thr Asn 465 470 475 480 Pro Glu Asp Met Arg Pro Tyr Cys Trp His Tyr Pro Pro Arg Gln Cys 485 490 495 Gly Val Val Ser Ala Lys Thr Val Cys Gly Pro Val Tyr Cys Phe Thr 500 505 510 500 Pro Ser Pro Val Val Val Gly Thr Thr Asp Arg Leu Gly Ala Pro Thr 525 515 520 Tyr Thr Trp Gly Glu Asn Glu Thr Asp Val Phe Leu Leu Asn Ser Thr 535 540 Arg Pro Pro Leu Gly Ser Trp Phe Gly Cys Thr Trp Met Asn Ser 545 550 555 550 Gly Tyr Thr Lys Thr Cys Gly Ala Pro Pro Cys Arg Thr Arg Ala Asp 565 570 575 Phe Asn Ala Ser Thr Asp Leu Leu Cys Pro Thr Asp Cys Phe Arg Lys
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1930 1935 1925 His Tyr Val Thr Glu Ser Asp Ala Ser Gln Arg Val Thr Gln Leu Leu 1945 1950 1940 Gly Ser Leu Thr Ile Thr Ser Leu Leu Arg Arg Leu His Asn Trp Ile 1955 1960 1965 Thr Glu Asp Cys Pro Ile Pro Cys Gly Gly Ser Trp Leu Arg Asp Val 1975 1980 1970 Trp Asp Trp Val Cys Thr Ile Leu Thr Asp Phe Lys Asn Trp Leu Thr 1985 1990 1995 200 Ser Lys Leu Phe Pro Lys Met Pro Gly Leu Pro Phe Val Ser Cys Gln 2005 2010 2015 Lys Gly Tyr Lys Gly Val Trp Ala Gly Thr Gly Ile Met Thr Thr Arg 2020 2025 2030 Cys Pro Cys Gly Ala Asn Ile Ser Gly Asn Val Arg Leu Gly Ser Met 2035 2040 2045 2035 2040 Arg Ile Thr Gly Pro Lys Thr Cys Met Asn Ile Trp Gln Gly Thr Phe 2050 2060 Pro Ile Asn Cys Tyr Thr Glu Gly Gln Cys Val Pro Lys Pro Ala Pro 2065 2070 2075 208 2070 2075 Asn Phe Lys Val Ala Ile Trp Arg Val Ala Ala Ser Glu Tyr Ala Glu 2085 2090 2095 Val Thr Gln His Gly Ser Tyr His Tyr Ile Thr Gly Leu Thr Thr Asp 2100 2105 2110 2100 Asn Leu Lys Val Pro Cys Gln Leu Pro Ser Pro Glu Phe Phe Ser Trp 2115 2120 2125 Val Asp Gly Val Gln Ile His Arg Phe Ala Pro Thr Pro Lys Pro Phe 2130 2135 2140 Phe Arg Asp Glu Val Ser Phe Cys Val Gly Leu Asn Ser Phe Val Val 2150 2155 Gly Ser Gln Leu Pro Cys Asp Pro Glu Pro Asp Thr Asp Val Leu Met 2165 2170 2175 2165 2170 Ser Met Leu Thr Asp Pro Ser His Ile Thr Ala Glu Thr Ala Ala Arg 2180 2185 2190 2185 2180 Arg Leu Ala Arg Gly Ser Pro Pro Ser Glu Ala Ser Ser Ser Ala Ser 2205 2200 2195 Gln Leu Ser Ala Pro Ser Leu Arg Ala Thr Cys Thr Thr His Gly Lys 2210 2215 2220 Ala Tyr Asp Val Asp Met Val Asp Ala Asn Leu Phe Met Gly Gly Asp 2225 2230 2235 224 2225 2230 2235 2246

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Ser Glu Glu Asp Asp Ser Val Val Cys Cys Ser Met Ser Tyr Ser Trp 2435 2440 2445 2445 2440 2435 Thr Gly Ala Leu Ile Thr Pro Cys Ser Pro Glu Glu Glu Lys Leu Pro 2450 2455 2460 2450 Ile Asn Pro Leu Ser Asn Ser Leu Leu Arg Tyr His Asn Lys Val Tyr 2470 2475 2480 Cys Thr Thr Thr Lys Ser Ala Ser Leu Arg Ala Lys Lys Val Thr Phe 2485 2490 2495 Asp Arg Met Gln Val Leu Asp Ser Tyr Tyr Asp Ser Val Leu Lys Asp 2500 2505 2510 Ile Lys Leu Ala Ala Ser Lys Val Thr Ala Arg Leu Leu Thr Met Glu 2515 2520 2525 Glu Ala Cys Gln Leu Thr Pro Pro His Ser Ala Arg Ser Lys Tyr Gly 2530 _ _ _ 2535 _ _ 2540 _ _ _ Phe Gly Ala Lys Glu Val Arg Ser Leu Ser Gly Arg Ala Val Asn His 2545 2550 2555 256 Ile Lys Ser Val Trp Lys Asp Leu Leu Glu Asp Ser Glu Thr Pro Ile 2565 2570 2575 2570 2575 2565 Pro Thr Thr Ile Met Ala Lys Asn Glu Val Phe Cys Val Asp Pro Thr 2585 Lys Gly Gly Lys Lys Ala Ala Arg Leu Ile Val Tyr Pro Asp Leu Gly 2595 2600 2605 Val Arg Val Cys Glu Lys Met Ala Leu Tyr Asp Ile Thr Gln Lys Leu 2610 2620 2620 Pro Gln Ala Val Met Gly Ala Ser Tyr Gly Phe Gln Tyr Ser Pro Ala 2625 2630 2635 264 2640 Gln Arg Val Glu Phe Leu Leu Lys Ala Trp Ala Glu Lys Lys Asp Pro 2645 2650 2655 Met Gly Phe Ser Tyr Asp Thr Arg Cys Phe Asp Ser Thr Val Thr Glu 2660 2665 2670 2665 2670 2660 Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Arg Ala Cys Ser Leu Pro 2675 2680 2685 Glu Glu Ala His Thr Ala Ile His Ser Leu Thr Glu Arg Leu Tyr Val 2695 2700 2690 Gly Gly Pro Met Phe Asn Ser Lys Gly Gln Thr Cys Gly Tyr Arg Arg 2705 2710 2715 272 2720 Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met Gly Asn Thr Ile Thr 2725 2730 2735 Cys Tyr Val Lys Ala Leu Ala Ala Cys Lys Ala Ala Gly Ile Ile Ala 2740 2745 2750 Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val Val Ile Ser Glu Ser 2755 2760 2765 Gln Gly Thr Glu Glu Asp Glu Arg Asn Leu Arg Ala Phe Thr Glu Ala 2770 2775 2780 Met Thr Arg Tyr Ser Ala Pro Pro Gly Asp Pro Pro Arg Pro Glu Tyr 2790 2795 2800 2785 Asp Leu Glu Leu Ile Thr Ser Cys Ser Ser Asn Val Ser Val Ala Leu 2805 2810 2815 Gly Pro Gln Gly Arg Arg Arg Tyr Tyr Leu Thr Arg Asp Pro Thr Thr 2820 _ _ _ 2830 Pro Ile Ala Arg Ala Ala Trp Glu Thr Val Arg His Ser Pro Val Asn 2835 2840 2845 Trp Leu Gly Asn Ile Ile Gln Tyr Ala Pro Thr Ile Trp Ala Arg 2850 2860 Met Val Leu Met Thr His Phe Phe Ser Ile Leu Met Ala Gln Asp Thr 2865 2870 2875 288 Leu Asp Gln Asn Leu Asn Phe Glu Met Tyr Gly Ala Val Tyr Ser Val 2885 2890 2895 2890 2895 2885 Ser Pro Leu Asp Leu Pro Ala Ile Ile Glu Arg Leu His Gly Leu Asp 2900 2905 2910 Ala Phe Ser Leu His Thr Tyr Thr Pro His Glu Leu Thr Arg Val Ala 2915 2920 2925 2920 2925 2915 Ser Ala Leu Arg Lys Leu Gly Ala Pro Pro Leu Arg Ala Trp Lys Ser Page 20

2930

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Lys Leu Thr Pro Leu Pro Glu Ala Arg Leu Leu Asp Leu Ser Ser Trp 2980

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Ser Ile Phe Lys Val Arg Met Tyr Val Gly Gly Val Glu His Arg Leu 625 630 635 640 Asn Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg Cys Asn Leu Glu Asp 645 650 645 Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu Ser Thr Thr Glu Trp 660 665 670 660 Gln Ile Leu Pro Cys Ala Phe Thr Thr Leu Pro Ala Leu Ser Thr Gly 685 680 675 Leu Ile His Leu His Gln Asn Ile Val Asp Val Gln Tyr Leu Tyr Gly 700 695 Val Gly Ser Ala Phe Val Ser Phe Ala Ile Lys Trp Glu Tyr Ile Leu 705 710 715 720 Leu Leu Phe Leu Leu Leu Ala Asp Ala Arg Val Cys Ala Cys Leu Trp 725 730 735 725 Met Met Leu Leu Île Ala Gln Ala Glu Ala Leu Glu Asn Leu Val 740 745 750 745 740 Val Leu Asn Ala Ala Ser Val Ala Gly Ala His Gly Ile Leu Ser Phe 755 760 765 Leu Val Phe Phe Cys Ala Ala Trp Tyr Ile Lys Gly Arg Leu Ala Pro 770 775 780 Gly Ala Ala Tyr Ala Phe Tyr Gly Val Trp Pro Leu Leu Leu Leu 285 790 795 800 790 Leu Ala Leu Pro Pro Arg Ala Tyr Ala Leu Asp Arg Glu Met Ala Ala 805 810 815 Ser Cys Gly Gly Ala Val Leu Val Gly Leu Val Phe Leu Thr Leu Ser 820 825 830 Pro Tyr Tyr Lys Val Phe Leu Thr Arg Leu Ile Trp Trp Leu Gln Tyr 835 840 845 Phe Ile Thr Arg Ala Glu Ala His Met Gln Val Trp Val Pro Pro Leu 850 860 Asn Val Arg Gly Gly Arg Asp Ala Ile Ile Leu Leu Thr Cys Ala Val 865 _ 870 _ 880 His Pro Glu Leu Ile Phe Asp Ile Thr Lys Leu Leu Leu Ala Ile Leu 885 890 895 Gly Pro Leu Met Val Leu Gln Ala Gly Ile Thr Arg Val Pro Tyr Phe 900 905 910 val Arg Ala Gln Gly Leu Ile Arg Ala Cys Met Leu Val Arg Lys Val 915 920 925 _ _ Ala Gly Gly His Tyr Val Gln Met Val Phe Met Lys Leu Gly Ala Leu 930 _ 935 940 Thr Gly Thr Tyr Val Tyr Asn His Leu Thr Pro Leu Arg Asp Trp Ala 945 950 955 960 950 His Ala Gly Leu Arg Asp Leu Ala Val Ala Val Glu Pro Val Val Phe 965 970 975 970 965 Ser Ala Met Glu Thr Lys Val Ile Thr Trp Gly Ala Asp Thr Ala Ala 980 985 990 Cys Gly Asp Ile Ile Leu Gly Leu Pro Val Ser Ala Arg Arg Gly Lys
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